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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,294	03/22/2004	Yuichiro Imanari	Q80464	9143

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EXAMINER

KOSLOW, CAROL M

ART UNIT PAPER NUMBER

1755

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/805,294

Applicant(s)

IMANARI ET AL

Examiner

C. Melissa Koslow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper."

Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

The disclosure is objected to because of the following informalities: It is unclear if the amount of acid on page 5, lines 16-20 is the amount of acid itself or the amount of the aqueous solution of the acid, which is discussed in lines 11-15 on page 5. In the examples, it needs to be made clear that the acid is in the form an aqueous solution, which the specification teaches is required to have the exemplified hydrogen ion concentration. Appropriate correction is required.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the water solution of acid". There is insufficient antecedent basis for this limitation in the claim or in claim 1 from which claim 7 depends.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. patent 5,472,636.

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This reference teaches washing a CaSiO_3 phosphor with citric acid, which is known to comprise contacting the phosphor with the acid, separating the phosphor from the acid and drying the phosphor. The reference clearly teaches the claimed process. While the reference does not teach the acid washing step produces a phosphor with a high brightness, the taught method would inherently produce a phosphor with a high brightness since it is identical to the claimed method.

Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. patent 5,839,718.

This reference teaches washing a phosphor that contains Sr or Sr and Ba; Mg or Mg and Zn; Si or Si and Ge and activated with at least europium with a mineral or inorganic acid (col. 5, lines 16-17), which is known to comprise contacting the phosphor with the acid, separating the phosphor from the acid and drying the phosphor. The reference clearly teaches the claimed process. While the reference does not teach the acid washing step produces a phosphor with a high brightness, the taught method would inherently produce a phosphor with a high brightness since it is identical to the claimed method.

Claims 1, 4, 7 and 8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. patent 4,208,448.

This reference teaches washing $\text{Zn}_2\text{SiO}_4\text{:Mn}$ phosphor with an organic acid, which is known to comprise contacting the phosphor with the acid, separating the phosphor from the acid and drying the phosphor. This phosphor is known to be used in vacuum ultraviolet ray-excited light emitting elements. The example teaches the use of an aqueous solution of acetic acid having a molarity of 0.7 M, which means it has a

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hydrogen ion concentration of 0.7 mol/l; the use of an aqueous solution of succinic acid having a molarity of 0.32 M, which means it has a hydrogen ion concentration of 0.16 mol/l and the use of an aqueous solution of terephthalic acid having a molarity of 0.025 M, which means it has a hydrogen ion concentration of 0.025 mol/l. The reference clearly teaches the claimed process. While the reference does not teach the acid washing step produces a phosphor with a high brightness, the taught method would inherently produce a phosphor with a high brightness since it is identical to the claimed method.

Claims 1, 2 and 4-6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. patent application publication 2002/0153510.

This reference teaches washing a silicon containing phosphor with diluted hydrochloric acid, which is known to comprise contacting the phosphor with the acid, separating the phosphor from the acid and drying the phosphor. The examples show the phosphor can also contain Sr, Mg and Eu (example II) or Sr, Ca, Mg and Eu (example IV). The reference clearly teaches the claimed process. While the reference does not teach the acid washing step produces a phosphor with a high brightness, the taught method would inherently produce a phosphor with a high brightness since it is identical to the claimed method.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,802,990 in view of U.S. patent application publication 2002/0153510 and U.S. patent 5,839,718.

U.S. patent 6,802,990 teaches producing a phosphor having the formula of claim 3. Column 4, line 63 teaches the phosphor can be washed, but it does not disclose what composition is used to wash the phosphor. U.S. patent application publication 2002/0153510 and U.S. patent 5,839,718 both teach that phosphors can be washed with a weak mineral acid or a dilute solution of hydrochloric acid to remove any remaining flux or impurities from the surface of the phosphor. Therefore, one of ordinary skill in the art would have found it obvious to wash the phosphor of U.S. patent 6,802,990 with a weak mineral acid or diluted hydrochloric acid. The suggested process is the same as that claimed and thus would inherently produce a phosphor with high brightness. The references suggest the claimed process.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
May 13, 2005


C. Melissa Koslow
Primary Examiner
Tech. Center 1700